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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,087	03/18/2004	Mitsuru Hasegawa	PHCF-04015	4164
21254 7590 10/19/2007 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER ZERVIGON, RUDY	
			ART UNIT 1792	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/803,087	<b>Applicant(s)</b> HASEGAWA ET AL.	
	<b>Examiner</b> Rudy Zervigon	<b>Art Unit</b> 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8,9,11-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8,9,11-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC §103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claim 1, 3-6, 8, 9, 11-14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okase; Wataru (US 5,592,581 A) in view of Takahashi; Ichiro (US 6228174 B1). Okase teaches a semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23), comprising: a reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) that includes a gas flow path (65,66; Figure 7) to allow source gas to pass through a substrate (2; Figure 7) mount site (support for 2; Figure 7) upon which to mount a substrate being provided in the gas flow path (65,66; Figure 7) inside the reaction vessel, said substrate mount site (support for 2; Figure 7) being located on an inside surface of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) along a first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23); a heater (76; Figure 7; column 9; lines 62-67) that is disposed outside of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) on said first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) along which the substrate mount site (support for 2; Figure 7) inside the reaction vessel is mounted; a cooling device (75; Figure 7; column 9, line 47 - column 10, line 23) that is disposed outside of the reaction vessel (processing vessel within and including 72;

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Figure 7; column 9, line 47 - column 10, line 23) on a second side (upper half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) substantially directly opposite to the heater (76; Figure 7; column 9; lines 62-67), said cooling device controlling an internal temperature of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) in a first section of the gas flow path where the substrate mount site (support for 2; Figure 7) is located; and a thermal conductivity adjusting member ("ceramic wool" inside 72; Figure 7; column 9, lines 53-61) that is disposed between the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) and the cooling device (75; Figure 7; column 9, line 47 - column 10, line 23); wherein the thermal conductivity adjusting member ("ceramic wool" inside 72; Figure 7; column 9, lines 53-61) allows the first section along the gas flow path where the substrate mount site (support for 2; Figure 7) is located to have a thermal conductivity different from that of a second section along the gas flow path in order to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) by providing a difference in temperature between regions of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23), as claimed by claim 1. That Okase's thermal conductivity adjusting member ("ceramic wool" inside 72; Figure 7; column 9, lines 53-61) comprises a variable thermal conductivity along the gas flow path (65,66; Figure 7) is likely anticipated according to the form of Okase's ceramic wool thermal conductivity

adjusting member. Wooly material is anticipated to have void spaces resulting in variable thermal conductivity<sup>1</sup>.

Okase further teaches:

- i. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 1, wherein: the first section comprises an interspace<sup>1</sup> formed between the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) and the thermal conductivity adjusting member ("ceramic wool" inside 72; Figure 7; column 9, lines 53-61), as claimed by claim 3
- ii. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 3, wherein: the interspace<sup>1</sup> has a varying height along the gas flow path (65,66; Figure 7), as claimed by claim 4
- iii. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 1, wherein: the first section comprises a material having a thermal conductivity that is different from a thermal conductivity of a material of the second section, as claimed by claim 5
- iv. A semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23), comprising: a reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) that includes a gas flow path (65,66; Figure 7) to allow source gas to pass through and a substrate (2; Figure 7) mount site (support for 2; Figure 7) on an inside surface of the reaction vessel to mount a substrate in the gas flow path (65,66; Figure 7); said substrate mount site (support for 2; Figure 7) being located on

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<sup>1</sup> **Wool 3 b:** a filamentous mass. Merriam-Webster's Collegiate Dictionary - 10th Ed. p.1362

a first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23); a heater (76; Figure 7; column 9; lines 62-67) that is disposed outside of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) on said first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) of the reaction vessel as the substrate mount site is located, the heater thereby being close to the substrate mount site (support for 2; Figure 7), and a cooling device (75; Figure 7; column 9, line 47 - column 10, line 23) to control an internal temperature of there action vessel in a section of the gas flow path where the substrate mount site is located, the cooling device disposed outside of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) on a second side (upper half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) substantially directly opposite to said first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) that the heater (76; Figure 7; column 9; lines 62-67) is located; wherein a wall thickness of the reaction vessel is smaller in the section along the gas flow path where the substrate mount site is located thereby forming an interspace (volume 72 less "wool"; Figure 7; column 9, lines 53-61) between the reaction vessel (processing vessel within and including 72; Figure 7;

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- column 9, line 47 - column 10, line 23) and the cooling device (75; Figure 7; column 9, line 47 - column 10, line 23) to lower a thermal diffusion effect of the source gas in the first section of the gas flow at the location of the substrate mount site, thereby forming a temperature gradient in the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) by providing a difference in temperature between regions of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23), as claimed by claim 6
- v. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 6, wherein: the interspace (volume 72 less “wool”; Figure 7; column 9, lines 53-61) has a height that varies along the gas flow path (65,66; Figure 7), as claimed by claim 8
- vi. A semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23), comprising: a reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) that includes a gas flow path (65,66; Figure 7) to allow source gas to pass through and a substrate (2; Figure 7) mount site (support for 2; Figure 7) provided in the gas flow path (65,66; Figure 7) to mount a substrate; said substrate mount site (support for 2; Figure 7) being located on an inside surface of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) along a first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) thereof; a heater (76; Figure 7; column 9; lines 62-67) that is disposed outside of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line

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23) along said first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) and close to the substrate mount site (support for 2; Figure 7), a cooling device (75; Figure 7; column 9, line 47 - column 10, line 23) that is disposed outside of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) on a second side (upper half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23), said second side (upper half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) being substantially directly opposite to the first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) along which said heater (76; Figure 7; column 9; lines 62-67) is located the cooling device controlling the internal temperature of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) in a vicinity of the substrate mount site; a plate member (surface 72, Figure 7; column 9, lines 53-61) that is disposed along said second side (upper half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) opposite to the substrate (2; Figure 7) mount site (support for 2; Figure 7) in the gas flow path (65,66; Figure 7); and a thermal conductivity adjusting member ("ceramic wool" inside 72; Figure 7; column 9, lines 53-61) that is disposed between the cooling device (75;



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Figure 7; column 9, line 47 - column 10, line 23) and the plate member (surface 72, Figure 7; column 9, lines 53-61); wherein the thermal conductivity adjusting member ("ceramic wool" inside 72; Figure 7; column 9, lines 53-61) provides a first section along the gas flow path with a thermal conductivity different from a second section along the gas flow path to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) by providing a difference in temperature between regions of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23), as claimed by claim 9 – see claim 1 for rationale.

- vii. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 9 wherein: the first section comprises an interspace (volume 72 less "wool"; Figure 7; column 9, lines 53-61) formed between the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) and the thermal conductivity adjusting member ("ceramic wool" inside 72; Figure 7; column 9, lines 53-61), as claimed by claim 11
- viii. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 11, wherein: the interspace (volume 72 less "wool"; Figure 7; column 9, lines 53-61) has a height that varies along the gas flow path (65,66; Figure 7), as claimed by claim 12
- ix. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 11, wherein: the first section comprises a material whose thermal

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conductivity is different from that of the second section, as claimed by claim 13 – refer to claim 1 rationale.

- x. A semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23), comprising: a reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) that includes a gas flow path (65,66; Figure 7) to allow source gas to pass through and a substrate (2; Figure 7) mount site (support for 2; Figure 7) provided in the gas flow path (65,66; Figure 7) to mount a substrate, said substrate mount site (support for 2; Figure 7) being located on an inside surface of said reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) on a first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) thereof; a heater (76; Figure 7; column 9; lines 62-67) that is disposed outside of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) along said first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) and close to the substrate mount site (support for 2; Figure 7), a cooling device (75; Figure 7; column 9, line 47 - column 10, line 23) that is disposed outside of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) on a second side (upper half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) thereof, said second side (upper half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) being substantially directly opposite to the first side (lower half of processing vessel within and including 72; Figure 7; column 9, line 47 - column

10, line 23) along which the heater is disposed to control the internal temperature of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) in a vicinity of the substrate mount site; and a plate member (surface 72, Figure 7; column 9, lines 53-61) that is disposed along said second side (upper half of processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) opposite to the substrate mount site in the gas flow path, the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) comprises a first section with a wall thickness smaller than a section other than the first section to form an interspace (volume 72 less "wool"; Figure 7; column 9, lines 53-61) between the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) and the cooling device (75; Figure 7; column 9, line 47 - column 10, line 23), to lower a thermal diffusion effect of the source gas in the first section, thereby forming a temperature gradient in the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23) by providing a difference in temperature between regions of the reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23), as claimed by claim 14

- xi. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 14, wherein: the interspace (volume 72 less "wool"; Figure 7; column 9, lines 53-61) comprises a variable height along the gas flow path (65,66; Figure 7), as claimed by claim 16

- xii. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 1, wherein said gas flow path (65,66; Figure 7) is substantially parallel with an exposed upper surface of said substrate (2; Figure 7) as mounted upon said substrate (2; Figure 7) mount site (support for 2; Figure 7), as claimed by claim 17. Applicant's claim requirement "said gas flow path is substantially parallel with an exposed upper surface of said substrate" is a claim requirement of intended use in the pending apparatus claims because the "gas flow path" depends on the geometry of the substrate which is not part of the apparatus. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).
- xiii. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 6, wherein said gas flow path (65,66; Figure 7) is substantially parallel with an exposed upper surface of said substrate (2; Figure 7) as mounted upon said substrate (2; Figure 7) mount site (support for 2; Figure 7), as claimed by claim 18. Applicant's claim requirement "is substantially parallel with an exposed upper surface of said substrate" is a claim requirement of intended use in the pending apparatus claims because the "gas flow path" depends on the geometry of the substrate which is not part of

the apparatus. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

- xiv. The semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 9, wherein said gas flow path (65,66; Figure 7) is substantially parallel with an exposed upper surface of said substrate (2; Figure 7) as mounted upon said substrate (2; Figure 7) mount site (support for 2; Figure 7), as claimed by claim 19. Applicant's claim requirement "is substantially parallel with an exposed upper surface of said substrate" is a claim requirement of intended use in the pending apparatus claims because the "gas flow path" depends on the geometry of the substrate which is not part of the apparatus. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the

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claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

- xv. The Semiconductor film formation device (Figure 7; column 9, line 47 - column 10, line 23) according to claim 14, wherein said gas flow path (65,66; Figure 7) is substantially parallel with an exposed upper surface of said substrate (2; Figure 7) as mounted upon said substrate (2; Figure 7) mount site (support for 2; Figure 7), as claimed by claim 20. Applicant's claim requirement "is substantially parallel with an exposed upper surface of said substrate" is a claim requirement of intended use in the pending apparatus claims because the "gas flow path" depends on the geometry of the substrate which is not part of the apparatus. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

Okase does not teach:

- i. *Using* his heater (76; Figure 7; column 9; lines 62-67) apparatus for non-uniform processing

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- ii. Okase's heater (76; Figure 7; column 9; lines 62-67) that is disposed along only a single side of Okase's reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23)
- iii. Okase's cooling device (75; Figure 7; column 9, line 47 - column 10, line 23) that is disposed along only a single side of Okase's reaction vessel (processing vessel within and including 72; Figure 7; column 9, line 47 - column 10, line 23)
- iv. In the event that "filamentous masses" are not deemed to have variable thermal conductivities:

Takahashi teaches a similar thermal treatment apparatus (Figure 1) including heating means (4; Figure 1) *used* either in uniform spatial temperature processing or nonuniform spatial temperature processing (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the density of Okase's ceramic "filamentous masses", and optimize the size and/or number of Okase's heater (76; Figure 7; column 9; lines 62-67) and Okase's cooling device (75; Figure 7; column 9, line 47 - column 10, line 23).

Motivation to optimize the density of Okase's ceramic "filamentous masses", and optimize the size and/or number of Okase's heater (76; Figure 7; column 9; lines 62-67) and Okase's cooling device (75; Figure 7; column 9, line 47 - column 10, line 23) is for optimizing Okase's reaction temperature as taught by Okase (column 1, lines 35-64) and for efficient processing as taught by Takahashi (column 6, line 50 – column 7, line 7). Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art. (Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ

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232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04).

It is also well established that the duplication of parts is obvious (In re Harza , 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 3-6, 8, 9, 11-14, and 16-20 have been considered but are not convincing.

4. Applicant states:

“

In contrast, Okase discloses a heat treatment apparatus in which a workpiece is heated with an equal temperature distribution and high repeatability on its entire surface. The object of Okasa is to provide a heat treatment apparatus for heat treating the workpiece with an equal temperature distribution. Another object of Okase is to provide a heat treatment apparatus for causing the temperature distribution and the concentration of a process gas to be equal on the entire surface.

Accordingly, Okase fails to disclose or to suggest that the temperature distribution is controlled to be non-uniform. Okase rather discloses a technical idea completely opposite to that of the present invention. Therefore, Okase teaches away from that the temperature gradient is formed in the reaction vessel

“

In response, the Examiner emphasizes that Applicant's arguments are based on *how* Okase's apparatus is used. The claims in the pending apparatus are apparatus claims that are patentably



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distinguished by structure, not function. When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01). Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02).

### *Conclusion*

5. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

*Rudy Zervigon*  
10/18/7